



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Patent Application of )

John I. Thackara )

Application No.: 10/718,668 )

Filed: November 24, 2003 )

For: LIQUID CRYSTAL THERMO-OPTIC )  
SWITCH AND ELEMENT )

) Group Art Unit: Unassigned

) Examiner: Unassigned

) Confirmation No.: Unassigned

**FIRST**  
**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, Applicant hereby submits the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98.

**U.S. Patent Documents**

4,070,092	Burns	1/24/78
4,775,207	Silberberg	10/4/88
4,828,362	Skinner et al.	5/9/89
6,084,050	Ooba et al.	7/4/00
6,311,004	Kenney et al.	10/30/01
6,546,163	Thackara	4/8/03

**Non Patent Literature Documents**

"Guided Wave devices for Optical Communication", R.C. Alferness, IEEE J. Quantum Electron., vol. QE-17, (1981), pp. 946-958

"Silica Waveguide Thermo-optic Phase Shifter with Low Power Consumption and Low Lateral Heat Diffusion", B.A. Moller et al., IEEE Photonics Technol. Lett., vol. 5, (1993), pp. 1415-1418

"2x2 Optical Waveguide Matrix Switch Using Nematic Liquid Crystal", M. Kobayashi et al., IEEE J. Quantum Electron., vol. QE-18, (1982), pp. 1603-1610

"Optics of Liquid Crystal Displays", P. Yeh et al., A Wiley Interscience Publication, John Wiley & Sons, Inc. (1999), pp. 5-13 & 59

"Liquid-crystal fiber-optic switch", R.A. Soref, Optics Letters, Optical Society of America, vol. 4 No. 5, (1979), pp. 155-157.

"SiO Evaporated Films Topography and Nematic Liquid Crystal Orientation", M. Monkade et al., J. Phys. II France 7 (1997), 1577-1597

"Flame Hydrolysis Deposition of Glass on Silicon for the Integration of Optical and Microfluidic Devices", J.M. Ruano et al., Anal. Chem. 2000, 72, (2000), pp. 1093-1097.

Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed. However, copies of the listed U.S. patents and U.S. patent application publications are not enclosed since it is no longer required according to the July 11, 2003 waiver of the requirement for copies of cited U.S. patents and U.S. patent application publications in national patent applications filed after June 30, 2003 and international applications entering the national stage under 35 U.S.C. § 371 after June 30, 2003.

The documents are being submitted within three (3) months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later. Since documents are being filed within the time period set forth in 37 C.F.R. § 1.97(b) no fee or statement is required.

To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner-initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, LLP

Date: 2/9/04

By: 

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In the Patent Application of

John I. Thackara

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For: LIQUID CRYSTAL THERMO-OPTIC  
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Group Art Unit: Unassigned

Examiner: Unassigned

Confirmation No.: Unassigned

**INFORMATION DISCLOSURE STATEMENT  
TRANSMITTAL LETTER**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Enclosed is an Information Disclosure Statement and accompanying form PTO-1449 for the above-identified patent application.

- ☒ No additional fee for submission of an IDS is required.
- ☐ The fee of as set forth in 37 C.F.R. § 1.17(p) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e), and the fee as set forth in 37 C.F.R. § 1.17(p) are also enclosed.
- ☐ Charge \$\_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due.
- ☐ A check in the amount of \$\_\_\_\_\_ is enclosed for the fee due.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BURNS, DOANE, SWECKER &amp; MATHIS, LLP

Date: 2/7/04By: 

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Substitute for forms 1449A/PTO &amp; 1449B/PTO

ATTORNEY'S DKT No.

APPLICATION No.

033785-013

10/718,668

# **FIRST INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

APPLICANT

John I. Thackara

FILING DATE

November 24, 2003

GROUP

Unassigned

## **U.S. PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)
	4,070,092	350/96	Burns	1/24/78
	4,775,207	350/96	Silberberg	10/4/88
	4,828,362	350/320	Skinner et al.	5/9/89
	6,084,050	528/42	Ooba et al.	7/4/00
	6,311,004	385/130	Kenney et al.	10/30/01
	6,546,163	385/18	Thackara	4/8/03

## **FOREIGN PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Country	Date of Publication (MM-DD-YYYY)	Translation Yes No

## **NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	"Guided Wave devices for Optical Communication", R.C. Alferness, IEEE J. Quantum Electron., vol. QE-17, (1981), pp. 946-958
	"Silica Waveguide Thermo-optic Phase Shifter with Low Power Consumption and Low Lateral Heat Diffusion", B.A. Moller et al., IEEE Photonics Technol. Lett., vol. 5, (1993) pp. 1415-1418
	"2x2 Optical Waveguide Matrix Switch Using Nematic Liquid Crystal", M. Kobayashi et al., IEEE J. Quantum Electron., vol. QE-18, (1982) pp. 1603-1610
	"Optics of Liquid Crystal Displays", P. Yeh et al., A Wiley Interscience Publication, John Wiley & Sons, Inc., (1999) pp. 5-13 & 59.
	"Liquid-crystal fiber-optic switch", R.A. Soref, Optics Letters, Optical Society of America, vol. 4 No. 5, (1979) pp. 155-157.
	"SiO Evaporated Films Topography and Nematic Liquid Crystal Orientation", M. Monkade et al., J. Phys. II France 7 (1997), pp. 1577-1597.
	"Flame Hydrolysis Deposition of Glass on Silicon for the Integration of Optical and Microfluidic Devices", J.M. Ruano et al., Anal. Chem. 2000, 72, (2000), pp. 1093-1097.

Examiner Signature	Date Considered
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.